भारतीय मानक
Indian Standard

IS 17793 : 2022

केरोसिन इंटरमीडिएट — विशिष्टि

Kerosene Intermediate — Specification

ICS 83.080.20

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February 2022 **Price Group 3**

Petroleum and Their Related Products of Synthesis or Biological Origin Sectional Committee, PCD 03

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Petroleum and Their Related Products of Synthesis or Biological Origin Sectional Committee was approved by the Petroleum, Coal and Related Products Division Council.

Kerosene intermediate is a middle distillate petroleum fraction derived out of various processes in the refinery or a liquid fraction recovered in the production of crude oil and natural gas. The refinery sources of kerosene intermediate are crude distillation units, coker units, hydrotreaters and hydrocrackers.

Kerosene Intermediate is used as a feedstock in Linear Alkyl Benzene (LAB) plant for extracting n-paraffins; which are then used to produce Linear Alkyl Benzene (LAB). The return kerosene coming back from LAB plants is also considered as intermediate kerosene stream. The kerosene intermediate stream requires further treatment in the form of hydro treating and/or merox processing to make the finished product; namely Kerosene or Aviation Turbine Fuel (ATF) in the refineries.

Kerosene intermediate is produced and traded by oil/gas producers and oil refineries. It is used by refineries in preparing various petroleum products. Therefore, in order to cater the requirements of revenue authorities, in classifying the product and to help in monitoring the quality of the product imported, this standard is being prepared.

The following alternate test methods also exists for testing the requirements specified in Table 1. In case of dispute the methods mentioned in Table 1 shall be the referee method.

Colour	ASTM D 156, ASTM D 6045
Density at 15 °C	ASTM D4052,
Total sulphur	ASTM D 4294, ASTM D 2622, ISO 8754
Flash point	IP 170
Smoke point	ASTM D 1322, IP 598, ISO 3014
Distillation	ASTM D 86, IP 123, ISO 3405

This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

The composition of the committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in the standard.

Indian Standard

KEROSENE INTERMEDIATE — SPECIFICATION

1 SCOPE

This standard prescribes the requirements and the methods of Kerosene intermediate used as a feed stock for producing Kerosene and aviation turbine fuel (ATF). It is also used as a blend stock in the preparation of automotive diesel fuel in the refineries.

2 REFERENCES

The following standards contain provisions which through reference in the text, constitute provisions of this standard. At the time of publication the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
1070 : 1992	Reagent grade water (*third revision*)
1260 (Part 1) : 1973	Pictorial marking for handling and labeling of goods: Part 1 Dangerous goods (*first revision*)
1446 : 2002	Classification of dangerous goods (*second revision*)
1447 (Part 1) : 2000	Petroleum and its products — Methods of sampling: Part 1 Manual sampling (*first revision*)
1448	Methods of test for petroleum and its products
Part 14 : 2019	Colour by saybolt chromometer (*first revision*)
Part 16 : 2014/ ISO 3675 : 1998	Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method (*fourth revision*)
Part 18 : 2020	Distillation of petroleum products (*third revision*)
Part 20 : 2019/ ISO 13736 : 2013	Determination of Flash point — Abel closed cup method (*third revision*)
Part 31 : 2017/ ISO 3014 : 1993	Determination of smoke point (*second revision*)
Part 153 : 2012/ ISO 20847 : 2004	Petroleum products — Determination of Sulfur content of automotive fuels — Energy-dispersive x – ray fluorescence spectrometry
Part 167 : 2020/ ISO 12185 : 1996	Determination of density — Oscillating U-tube method

3 REQUIREMENTS

The material shall comply with the requirements given in Table 1.

4 PACKING AND MARKING

4.1 Packing

The containers used for storage and transport of the material shall comply with the requirements of the latest issue of Red Tariff in addition to the requirements laid down by the Petroleum and Explosives Safety Organization (PESO) for packing, storage and transit of flammable liquids and the International Maritime Organisation (IMO)/ International Maritime Dangerous Goods (IMDG) regulations as applicable therein for transport by ships, from time to time.

4.1.1 Necessary safeguards against the risk arising from the storage and handling of large volumes of flammable liquids shall be provided at all times to prevent accidents by fire or explosion, as required by Petroleum and Explosives Safety Organization (PESO).

4.2 Marking

4.2.1 Each road container shall be marked with the following information:

a) Name of the material;
b) Indication of the source of manufacture, initials or trade-mark, if any;
c) Volume of the contents, in litres;
d) Year of manufacture or packing; and
e) Any other statutory requirements.

4.2.2 Each road container shall have the caution label 'FLAMMABLE' together with the corresponding symbol for labelling of dangerous goods as given in IS 1260 (Part1).

Table 1 Requirements for Kerosene Intermediate

(*Clauses* 3 *and* 7.1)

Sl No.	Characteristic	Requirement	Methods of Test, Ref to Part of IS 1448/ISO
(1)	(2)	(3)	(4)
i)	Appearance	Clear and bright	Visual
ii)	Colour (Saybolt)	Report	Part 14
iii)	Density at 15 °C, kg/m^3	770 to 826	Part 167/ Part 16[1]
iv)	Total sulphur, percent by mass, *Max*	0.5	Part 153 (For sulphur range – 30 to 500 ppm) ISO 8754 (For sulphur range - 0.03 percent to 0.5 percent)
v)	Flash point (Abel), °C, *Min*	35.0	Part 20
vi)	Smoke point, mm, *Min*	15.0	Part 31
vii)	Distillation:		
	a) Initial boiling point, °C	To report	Part 18
	b) Final boiling point, °C, *Max*	300.0	
	c) Percent of volume recovered below 200°C, *Min*	20.0	

[1] In case of dispute, this shall be the referee method.

4.2.3 *BIS Certification Marking*

The product conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the relevant Standard Mark.

5 HANDLING

The material shall be handled in accordance with the marking and shipping regulations laid down by Petroleum and Explosives Safety Organization (PESO) from time to time.

6 SAMPLING

Representative samples of the material shall be drawn as prescribed in IS 1447 (Part 1).

7 TEST METHODS

7.1 Tests shall be conducted according to the methods prescribed in col 4 of Table 1.

7.2 Quality of Reagents

Unless otherwise specified, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — *'Pure chemicals'* shall mean chemicals that do not contain impurities, which affect the results of analysis.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Petroleum and their Related Products of Synthesis or Biological Origin Sectional Committee, PCD 03

Organization	*Representative(s)*
In Personal Capacity	Dr L. M. Das (***Chairman***)
Afton Chemicals, Mumbai	Shri Anand Kumar
Ashok Leyland Ltd, Chennai	Shri Balakrishnan D. Shri Mahesh P. (*Alternate*)
Association of State Road Transport Undertaking (ASRTU), New Delhi	Shri R. R. K. Kishore Shri Capt V. V. Ratnaparkhi (*Alternate*)
Automotive Research Association of India, Pune	Shri M. A. Bawase Dr S. S. Thipse (*Alternate*)
Bajaj Auto Ltd, Pune	Shri Yogesh. R. Mahajan
Bharat Oman Refineries Lid, Sagar, MP	Shri Anand Pratap Raghav Shri B. Sridhar (*Alternate*)
Bharat Petroleum Corporation Ltd, Mumbai	Shri R. Subramanian Shri C. Shanmuganathan (*Alternate*)
Biodiesel Association of India, Mumbai	Shri N. S. Balamukundan Shri Sanjeev Gupta (*Alternate*)
Biogas Forum of India, New Delhi	Dr A. R. Shukla
Bosch Ltd, Bengaluru	Shri A. Fredrick Shri D. Ramaraju (*Alternate*)
Centre for Consumer Education, Research, Teaching, Training and Testing (CONCERT), Chennai	Shri K. Krishnakumar Shri M. Somasundaram (*Alternate*)
Centre for High Technology, Ministry of Petroleum and Natural Gas, New Delhi	Shri P. Raman Dr N. S. Raman (*Alternate* I) Shri Shekar Kulkarni (*Alternate* II)
Centre for Science and Environment (CSE), New Delhi	Ms Anumita Roychowdhury Shri Vivek Chattopadhya (*Alternate*)
Chennai Petroleum Corporation Ltd (CPCL), Chennai	Dr V. Selvavathi Shri H. Ramakrishnan (*Alternate*)
Central Pollution Control Board, (Ministry of Environment & Forests), New Delhi	Shri Dinabandhu Gouda
Consumer Guidance Society of India, Mumbai	Dr Sitaram Dixit Dr M. S. Kamath (*Alternate*)
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Directorate General of Aeronautical Quality Assurance	Shri Santosh Namdeo Shri Santosh Anmdeo Ingole (*Young Professional*)
DRDO-Centre for Military Airworthiness and Certification, Bengaluru	Shri R. Shanmugavel Shri R. Kamalakannan (*Alternate*)
Federation of Indian Petroleum Industry, New Delhi	Shri D. L. N. Sastri

Organization	*Representative(s)*
General Motors, Maharashtra	Shri Sunil P. S. Shri Rajendra Khile (*Alternate*)
Gulf Oil Lubricants India Ltd, Mumbai	Dr Y. P. Rao Shri Sanjay Kumar (*Alternate* I) Shri Jencen Mathai Arivannoor (*Alternate* II)
Hero Motocorp Ltd, Gurugram	Shri Feroz Ali Khan Shri Abhay Kumar (*Alternate*)
Hindustan Petroleum Corporation Ltd, Mumbai	Shri Elecheran Kumar Shri Santosh Dhaku Bhogale (*Alternate* I) Shri Shitanshu Pati Tripathi (*Alternate* II) Shri Rohit Kumar Gupta (*Young Professional*)
Honda Cars, Noida, UP	Shri Tarun Bhat Shri N. S.Talib (*Alternate*)
Indian Institute of Petroleum, Dehradun	Dr Anjan Ray Dr T. Bhaskar (*Alternate*)
Indian Oil Corporation Ltd, (R & D Centre), Faridabad	Shri V. Kagdiyal
Indian Oil Corporation Ltd, (Refineries), New Delhi	Shri R. K. Kaushik Singha Dr Y. S. Jhala (*Alternate*)
Indian Oil Corporation (MKTG), Mumbai	Shri Manish Malhan Shri Krishnamoorthy A. S. (*Alternate*)
Lubrizol India Ltd, Mumbai	Shri Anand Redkar Shri Puneet Verma (*Alternate*)
Mahindra and Mahindra Ltd, Chennai	Shri R. Ramaprabhu
Mangalore Refinery and Petro-Chemical Ltd,	Shri V. Nanda Kumar Shri M. Salina Kumar (*Alternate* I) Shri Sudesh Kamath P. (*Alternate* II)
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Ministry of Defence (DRDO), Ahmednagar	Shri K. Mathivanan
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Ministry of Road Transport and Highways, New Delhi	Representative
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ONGC, New Delhi	Shri Ajay Kumar Jain Shrimati Leena John (*Alternate* I) Shri Dinesh S. R. Reddy Kakuturi (*Alternate* II)
Oil Industry Safety Directorate, Noida	Shri Manish Sarda Shri Rajesh Manocha (*Alternate*)
Petroleum Conservation Research Association, New Delhi	Shri M. P. Bangwal

Organization	*Representative(s)*
Petroleum and Explosives Safety Organization, Nagpur	Dr S. K.Dixit Shri Ninad Gawade (*Alternate*)
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Shrimati Nagamani.T
Scientist 'E' and Head (PCD), BIS

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Central Pollution Control Board, New Delhi	Shri Dinabandhu Gouda
Chennai Petroleum Corporation Ltd, Chennai	Dr V. Selvavathi Shri H. Ramakrishnan (*Alternate*)
Centre For High Technology, New Delhi	Shri N. S. Raman Shri P. Raman (*Alternate* I) Shri Shekar Kulkarni (*Alternate* II)
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Indian Oil Corporation Ltd, (Marketing), Mumbai	Shri Krishnamoorthy A. S. Shri G. K. Sharma (*Alternate*)

Organization	*Representative(s)*
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